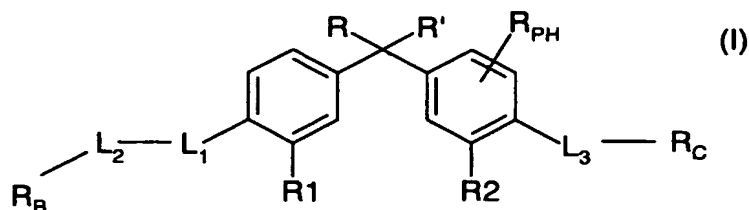


-154-

WE CLAIM:

1. A compound represented by formula (I) or a pharmaceutically acceptable salt or a prodrug derivative thereof:



wherein;

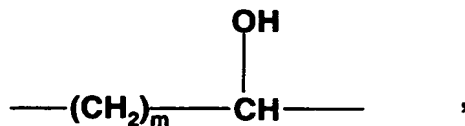
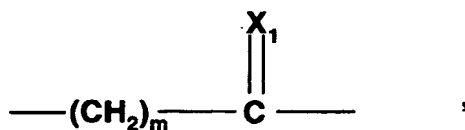
R and R' are independently C₁-C₅ alkyl, C₁-C₅ fluoroalkyl, or together R and R' form a substituted or unsubstituted, saturated or unsaturated carbocyclic ring having from 3 to 8 carbon atoms;

10 R_{PH} is hydrogen or methyl;

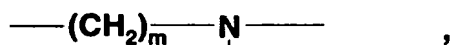
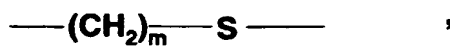
R₁ and R₂ are independently selected from the group consisting of hydrogen, halo, C₁-C₅ alkyl, C₁-C₅ fluoroalkyl, -O-C₁-C₅ alkyl, -S-C₁-C₅ alkyl, -O-C₁-C₅ fluoroalkyl, -CN, -NO₂, acetyl, -S-C₁-C₅ fluoroalkyl, C₂-C₅ alkenyl, C₃-C₅ cycloalkyl, and C₃-C₅ cycloalkenyl;

15 L₁ and L₂ and L₃ are independently divalent linking groups independently selected from the group consisting of

a bond ,

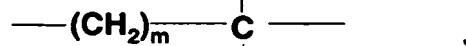


-155-

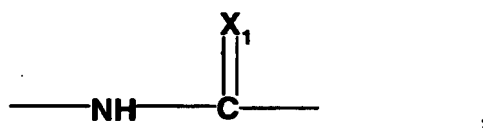
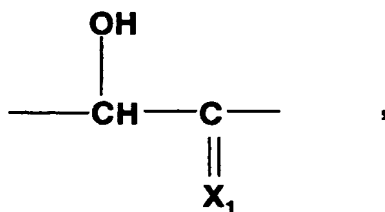
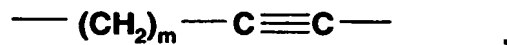
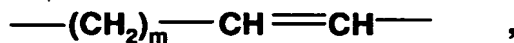


R40

R40



R40



where m is 0, 1 or 2, X₁ is oxygen or sulfur, and each R40 is independently hydrogen, C₁-C₅ alkyl, or C₁-C₅ fluoroalkyl;

R_B isbranched C₃-C₅ alkyl,

3-methyl-3-hydroxypentyl,

3-methyl-3-hydroxypentenyl,

3-methyl-3-hydroxypentynyl,

3-ethyl-3-hydroxypentyl,

3-ethyl-3-hydroxypentenyl,

3-ethyl-3-hydroxypentynyl,

3-ethyl-3-hydroxy-4-methylpentyl,

-156-

3-ethyl-3-hydroxy-4-methylpentenyl,
3-ethyl-3-hydroxy-4-methylpentynyl,
3-propyl-3-hydroxypentyl,
3-propyl-3-hydroxypentenyl,
5 3-propyl-3-hydroxypentynyl,
1-hydroxy-2-methyl-1-(methylethyl)propyl,
3-methyl-3-hydroxy-4,4-dimethylpentyl,
3-methyl-3-hydroxy-4,4-dimethylpentenyl,
3-methyl-3-hydroxy-4,4-dimethylpentynyl,
10 3-ethyl-3-hydroxy-4,4-dimethylpentynyl,
3-ethyl-3-hydroxy-4,4-dimethylpentenyl,
3-ethyl-3-hydroxy-4,4-dimethylpentynyl,
4,4-dimethyl-3-hydroxypropyl,
1-hydroxycyclopentenyl,
15 1-hydroxycyclohexenyl,
1-hydroxycycloheptenyl,
1-hydroxycyclooctenyl,
1-hydroxycyclopropyl,
1-hydroxycyclobutyl,
20 1-hydroxycyclopentyl,
1-hydroxycyclohexyl,
1-hydroxycycloheptyl, or
1-hydroxycyclooctyl;

provided, however, that when

25

 R_B is

3-methyl-3-hydroxypentyl,
3-methyl-3-hydroxypentenyl,
3-methyl-3-hydroxypentynyl,
3-ethyl-3-hydroxypentyl,
30 3-ethyl-3-hydroxypentenyl,
3-ethyl-3-hydroxypentynyl,
4,4-dimethyl-3-hydroxypropyl,

-157-

3-ethyl-3-hydroxy-4-methylpentyl,
 3-ethyl-3-hydroxy-4-methylpentenyl,
 3-ethyl-3-hydroxy-4-methylpentynyl,
 3-propyl-3-hydroxypentyl,
 3-propyl-3-hydroxypentenyl,
 3-propyl-3-hydroxypentynyl,
 3-methyl-3-hydroxy-4,4-dimethylpentyl,
 3-methyl-3-hydroxy-4,4-dimethylpentenyl,
 3-methyl-3-hydroxy-4,4-dimethylpentyl,
 3-ethyl-3-hydroxy-4,4-dimethylpentynyl,
 3-ethyl-3-hydroxy-4,4-dimethylpentenyl,
 3-ethyl-3-hydroxy-4,4-dimethylpentynyl, or
 1-hydroxy-2-methyl-1-(methylethyl)propyl;

then L_1 and L_2 combine as a bond; and

R_C is

-O-SO₂-(R50)

where R50 is

-C₁₋₃alkyl, -CF₃, -(CH₂)₁₋₂CF₃,

-S-C₁₋₃alkyl, -SO₂-C₁₋₃alkyl,

-(CH₂)₁₋₂C(O)NHMe,

-(CH₂)₁₋₂-CO₂H; or

-NH-SO₂-(R50)

where R50 is

-C₁₋₃alkyl, -CF₃, -(CH₂)₁₋₂CF₃,

-S-C₁₋₃alkyl, -SO₂-C₁₋₃alkyl,

-(CH₂)₁₋₂-CO₂H,

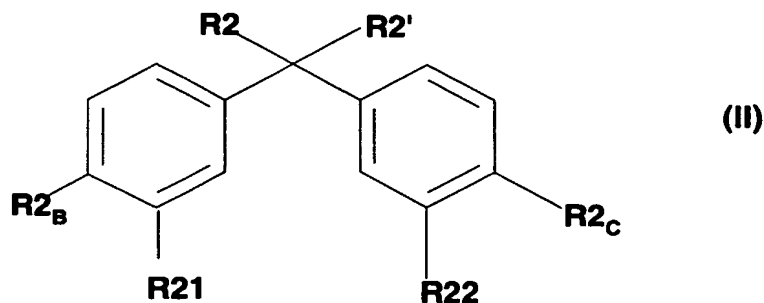
-(CH₂)₁₋₂C(O)NHMe, or

-158-

 $-N(SO_2R_{51})_2$ where each R_{51} is independently, $-C_{1-3}alkyl$, $-CF_3$, $-(CH_2)_{1-2}CF_3$, $-(CH_2)_{1-2}C(O)NHMe$, $-S-C_{1-3}alkyl$, $-SO_2-C_{1-3}alkyl$, or $-(CH_2)_{1-2}-CO_2H$.

2. A compound or pharmaceutically acceptable salt or prodrug thereof according to Claim 1 wherein R_{PH} is hydrogen.

3. A compound represented by formula (II) or a pharmaceutically acceptable salt or a prodrug derivative thereof:



wherein;

R_2 and $R_{2'}$ are independently methyl or ethyl;

R_{21} and R_{22} are independently selected from the group consisting of hydrogen, fluoro, $-Cl$, $-CF_3$, $-CH_2F$, $-CHF_2$, methoxy, ethoxy, vinyl, methyl, ethyl, propyl, 1-methylethyl, 1,1-dimethylethyl, butyl, 1-methylpropyl, 2-methylpropyl, or cyclopropyl;

R_{2B} is a group represented by the formula:

3-methyl-3-hydroxypentyl,

3-methyl-3-hydroxypentenyl,

3-methyl-3-hydroxypentynyl,

3-ethyl-3-hydroxypentyl,

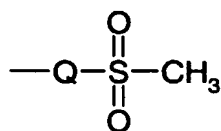
3-ethyl-3-hydroxypentenyl,

3-ethyl-3-hydroxypentynyl,

3-ethyl-3-hydroxy-4-methylpentyl,

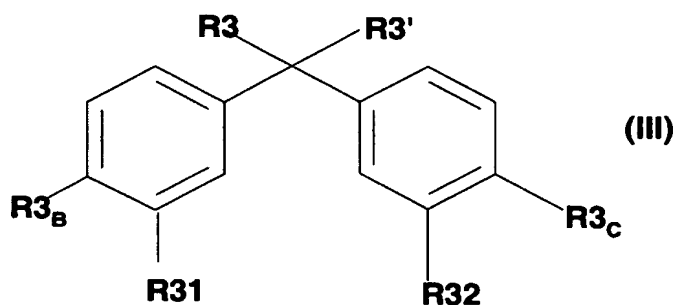
-159-

3-ethyl-3-hydroxy-4-methylpentenyl,
 3-ethyl-3-hydroxy-4-methylpentynyl,
 3-propyl-3-hydroxypentyl,
 3-propyl-3-hydroxypentenyl,
 3-propyl-3-hydroxypentynyl,
 1-hydroxy-2-methyl-1-(methylethyl)propyl

R_{2C} is

where Q is -O- or -NH-.

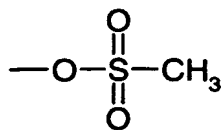
4. A compound represented by formula (III) or a pharmaceutically acceptable salt or a prodrug derivative thereof:



15 wherein;

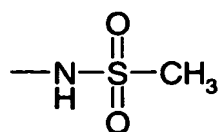
R₃ and R_{3'} are independently methyl or ethyl;

R₃₁ and R₃₂ are independently selected from the group consisting of hydrogen, fluoro, -Cl, -CF₃, -CH₂F, -CHF₂, methoxy, ethoxy, vinyl, methyl, ethyl, propyl, 1-methylethyl, 1,1-dimethylethyl, butyl, 1-methylpropyl, 2-methylpropyl, or cyclopropyl;

20 R_{3B} is 3-hydroxy-3-ethyl-pentyl or 4,4-dimethyl(-3-hydroxypropyl).R_{3C} is

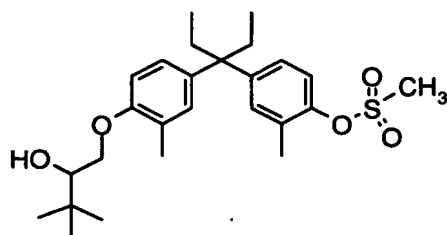
-160-

or

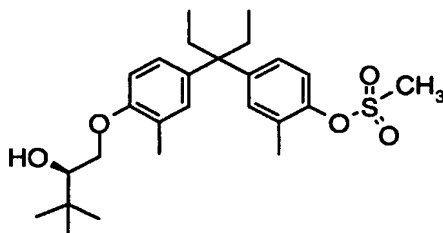


5. A compound or a pharmaceutically acceptable salts or an ester prodrug
5 derivative thereof according to Claim 1 represented by the structural formulae M-1 to M-31 as follows:

M-1)



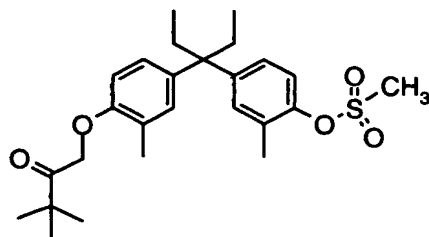
M-2)



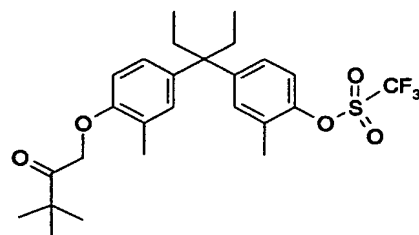
10

M-3)

-161-

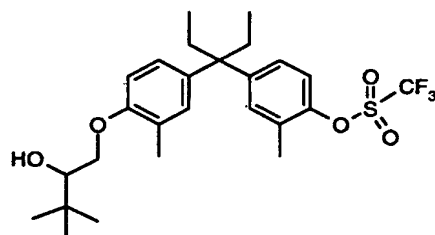


M-4)

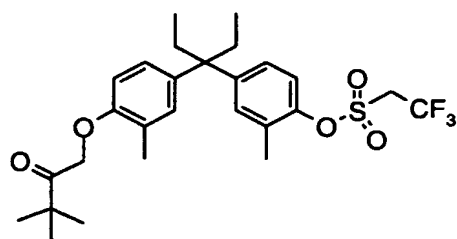


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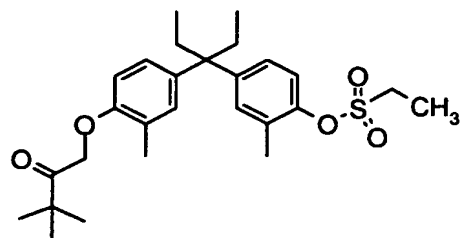
M-5)



M-6)

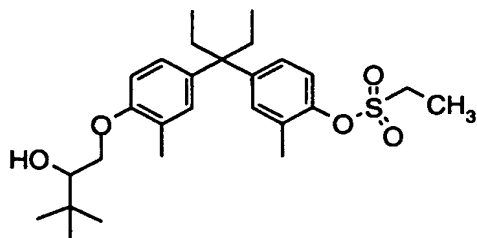


M-7)

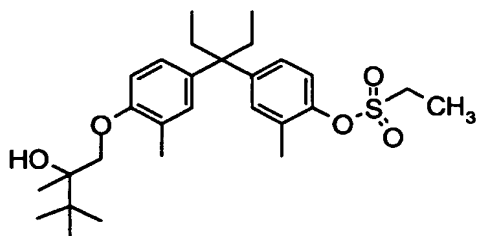


-162-

M-8)

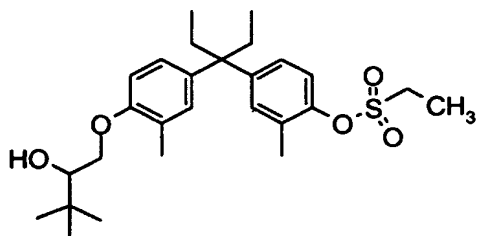


M-9)

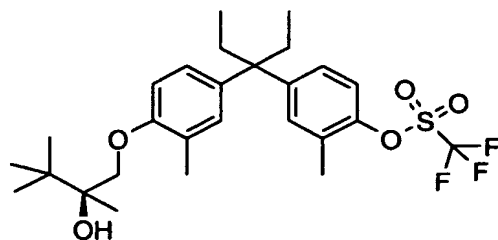


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M-11)



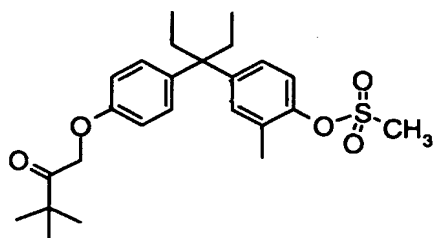
M-12)



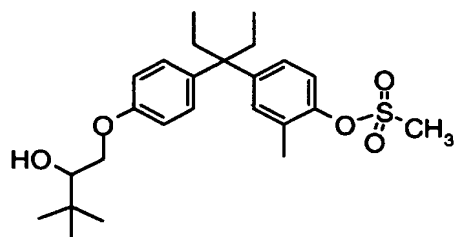
10

M-13)

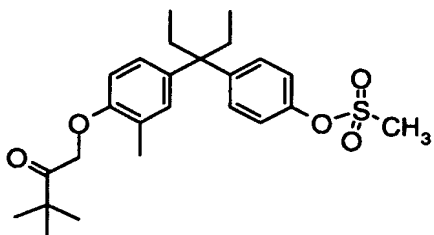
-163-



M-14)

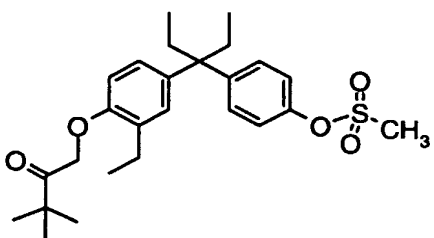


M-15)

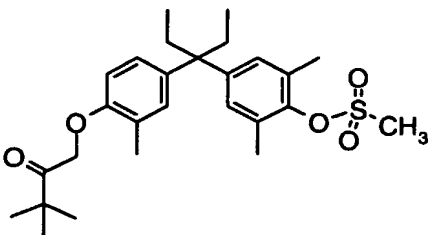


5

M-16)



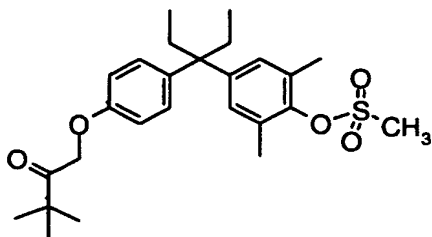
M-17)



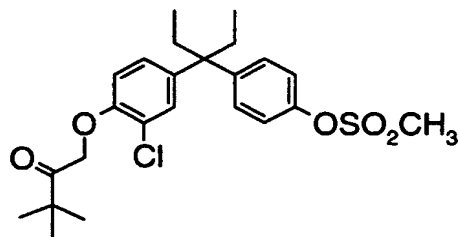
10

M-18)

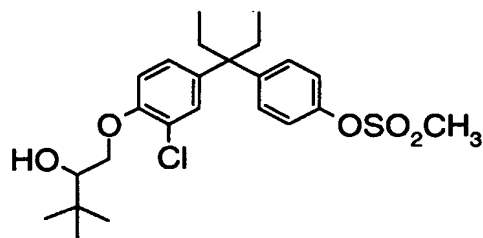
-164-



M-19)

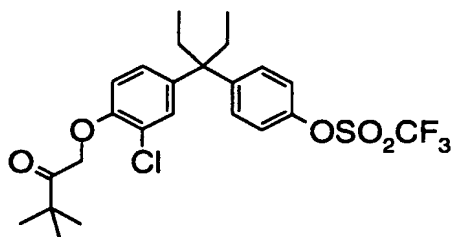


M-20)



5

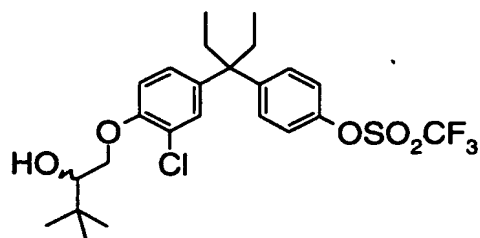
M-22)



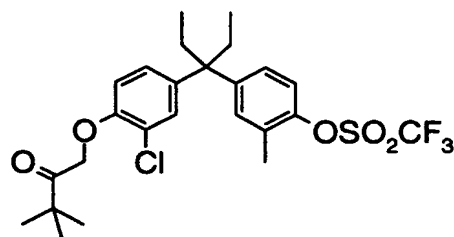
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M-23)

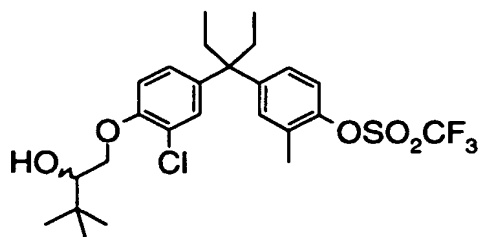
-165-



M-24)

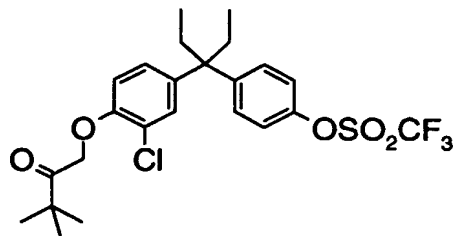


M-25)



5

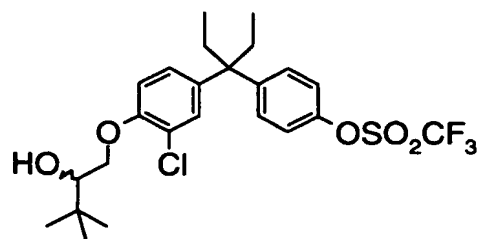
M-28)



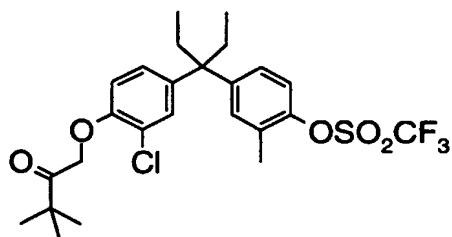
10

M-29)

-166-

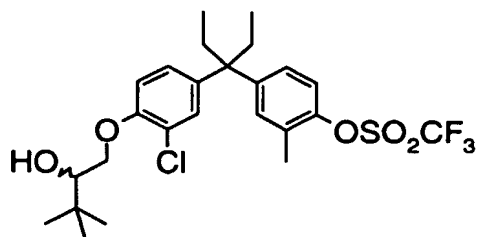


M-30)



or

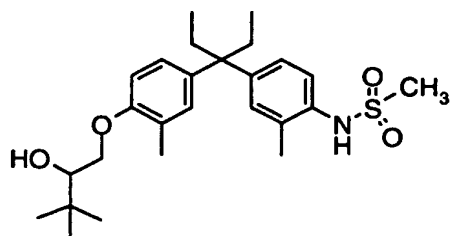
M-31)



5

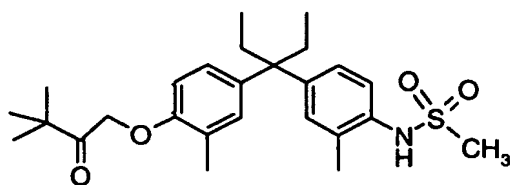
6. A compound or a pharmaceutically acceptable salt or an ester prodrug
 10 derivative thereof according to Claim 1 represented by the structural formulae M-32 to M-
 50 as follows:

M-32)

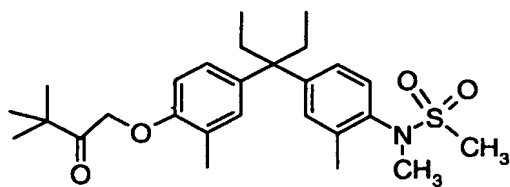


-167-

M-34)

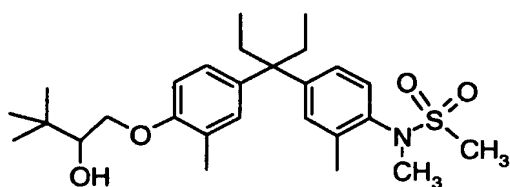


M-35)

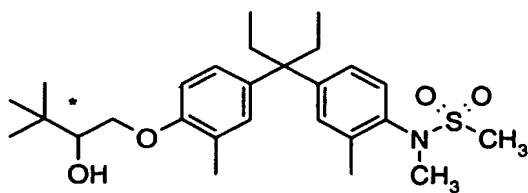


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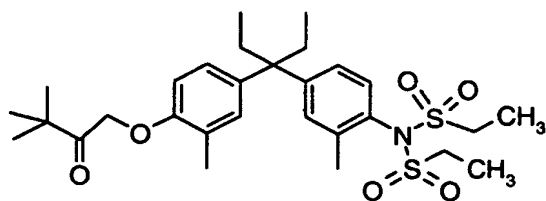
M-36)



M-37)

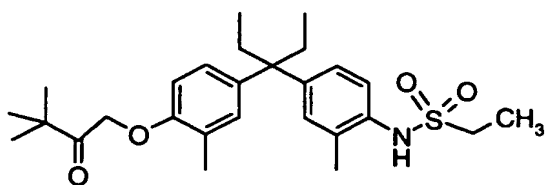


M-38)



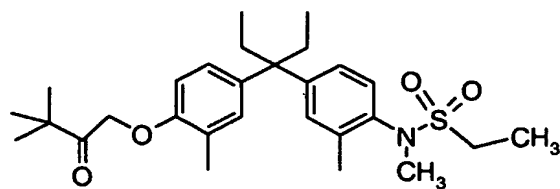
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M-39)

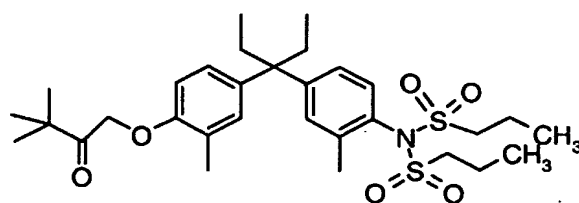


M-40)

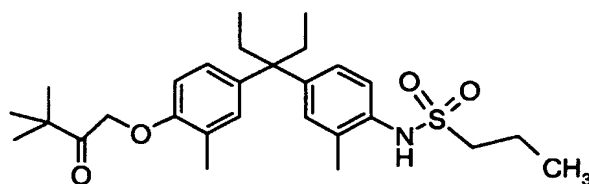
-168-



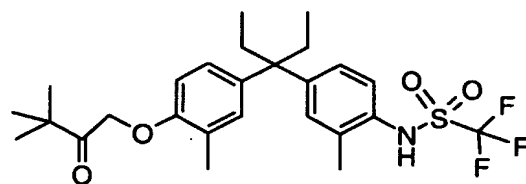
M-41)



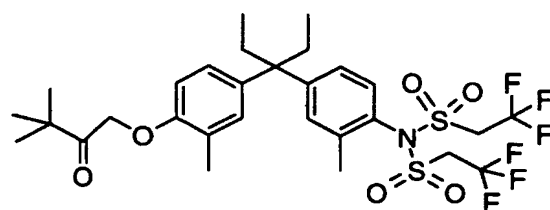
M-42)



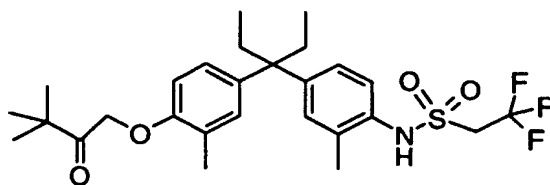
M-43)



M-44)

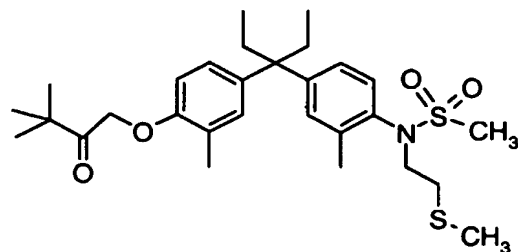


M-45)

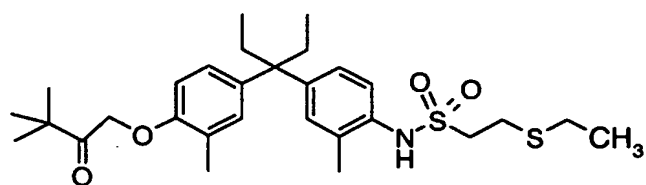


-169-

M-46)

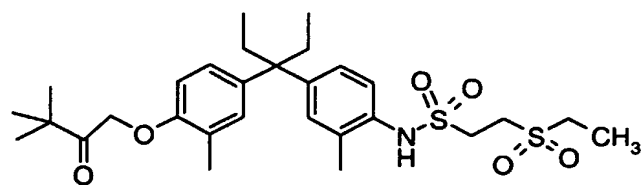


M-47)

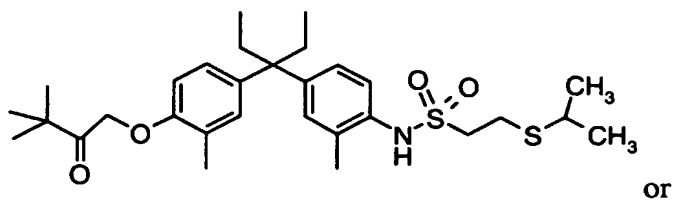


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M-48)

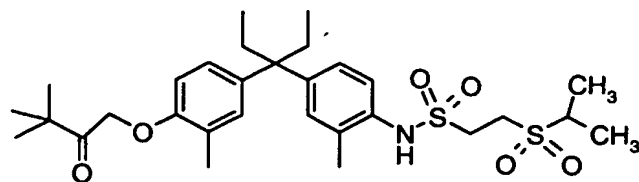


M-49)



or

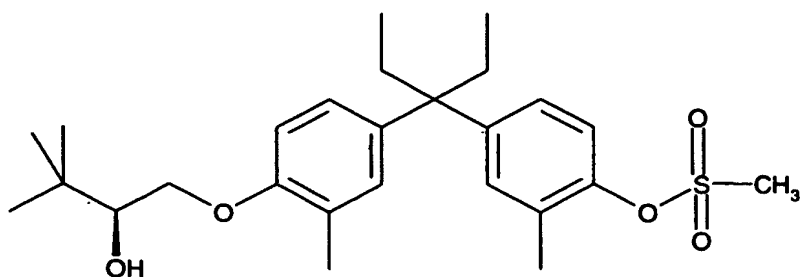
M-50)



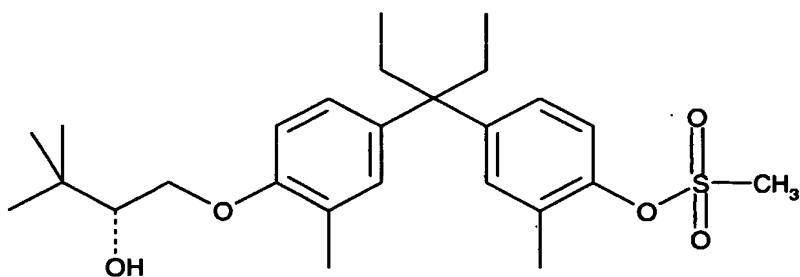
10

7. A compound according to Claim 1 represented by the formula:

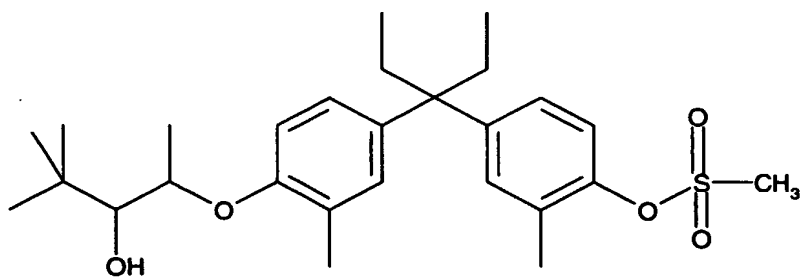
-170-



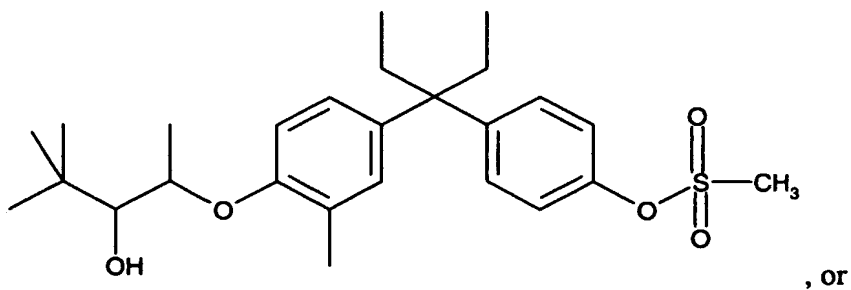
or



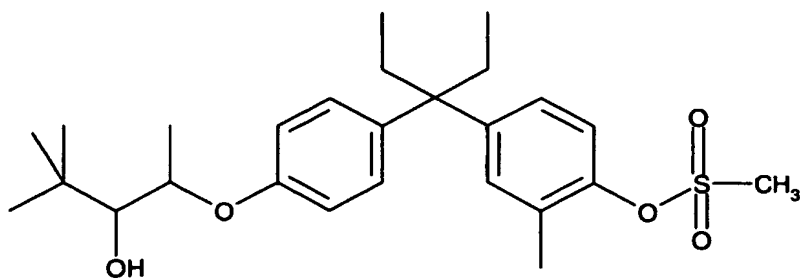
8. A compound according to Claim 1 represented by the formula:



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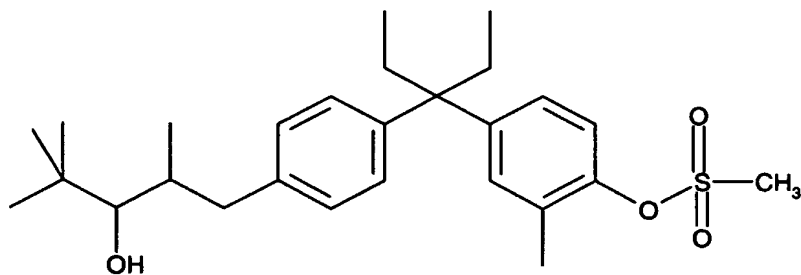
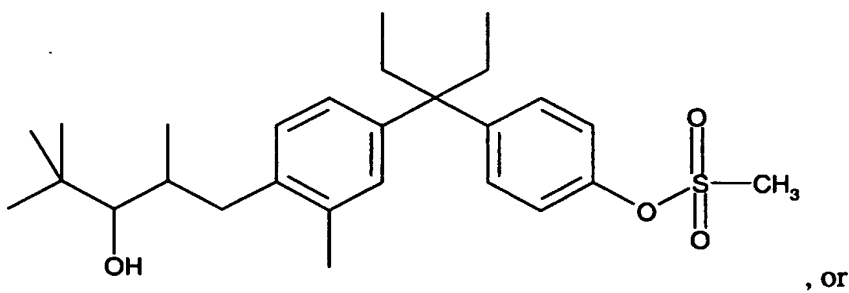
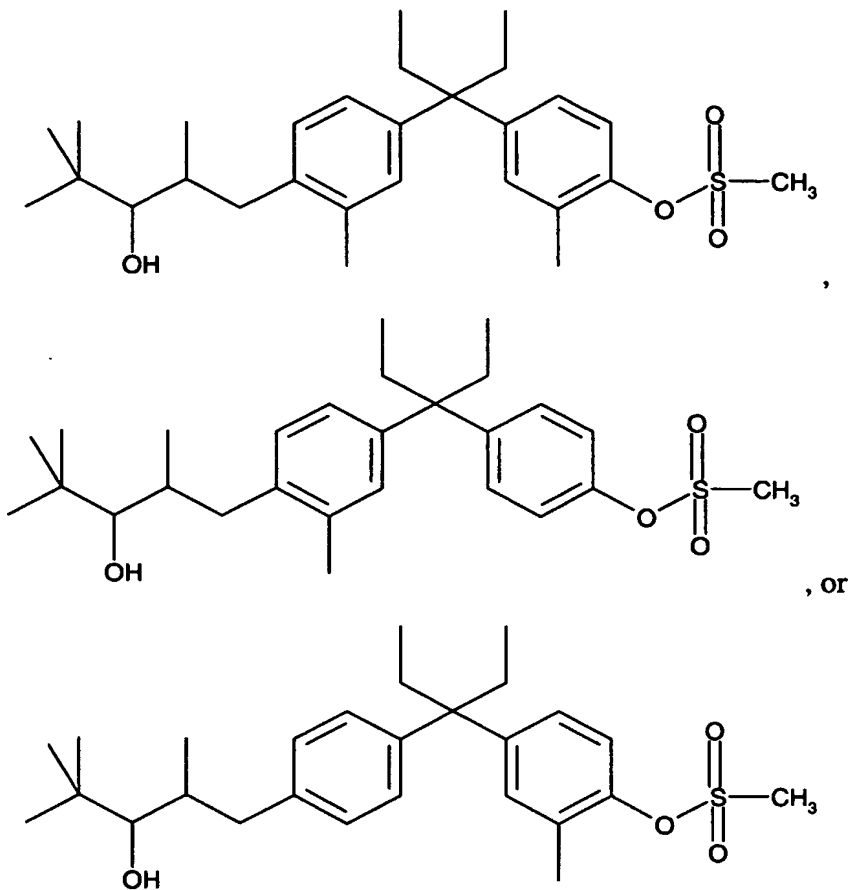


, or



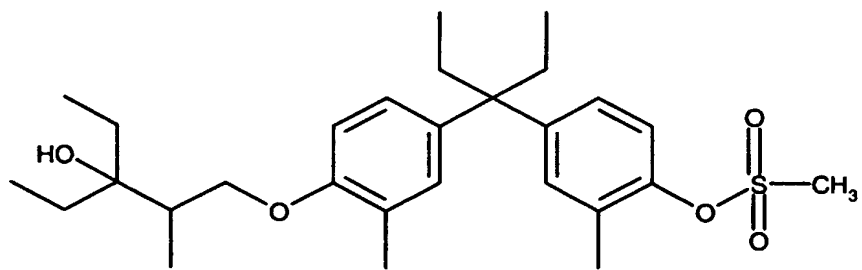
-171-

9. A compound according to Claim 1 represented by the formula:

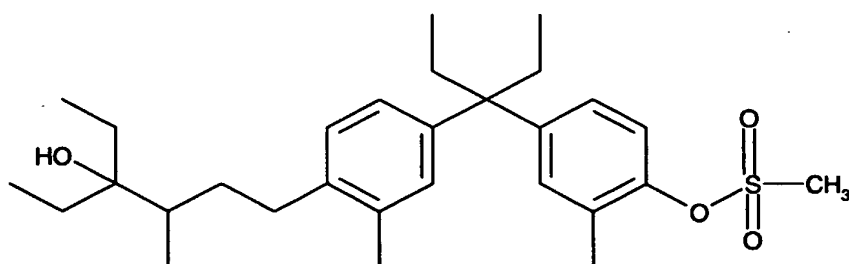
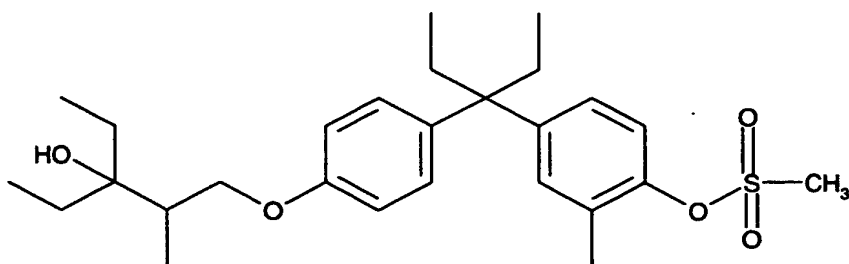
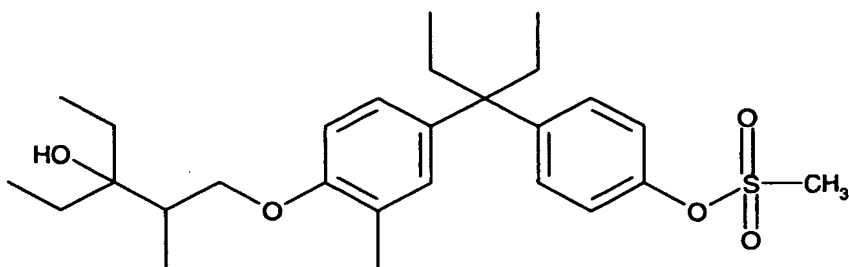


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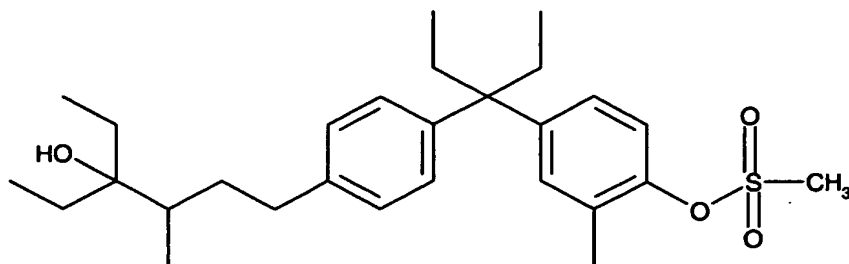
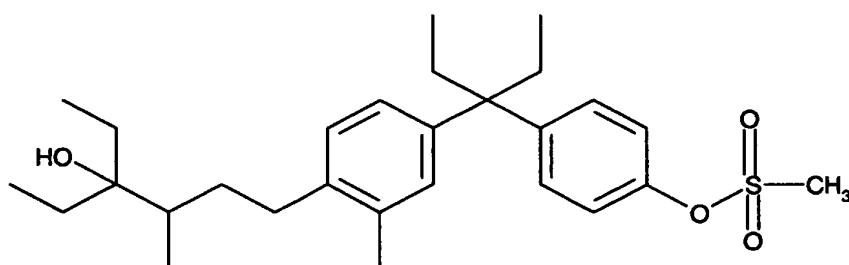
10. A compound according to Claim 1 represented by the formula:



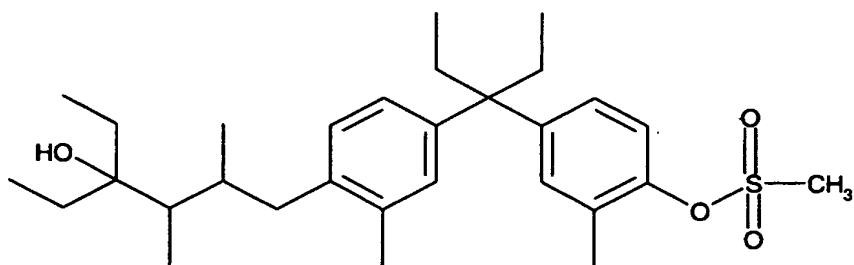
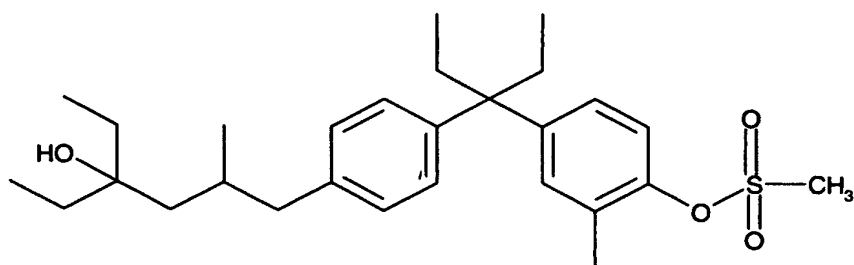
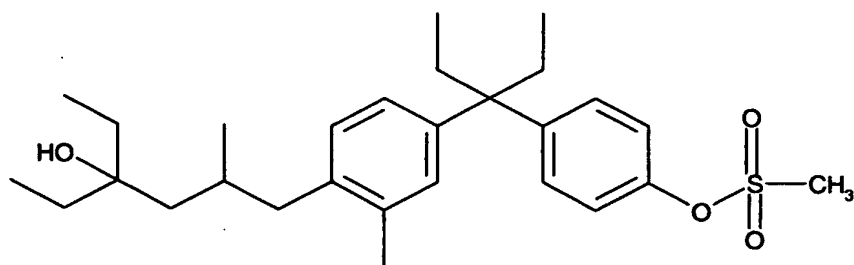
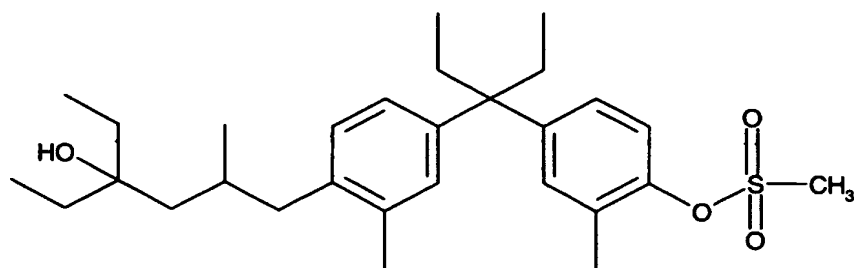
-172-



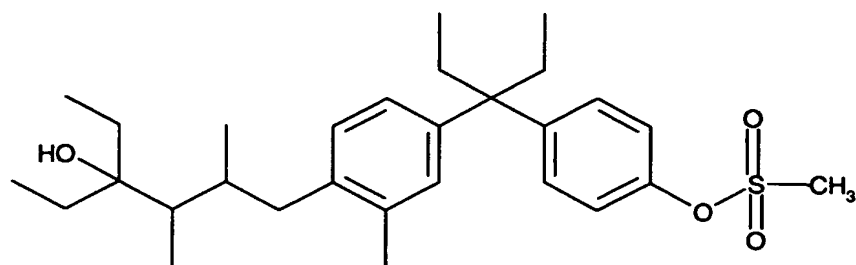
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-173-

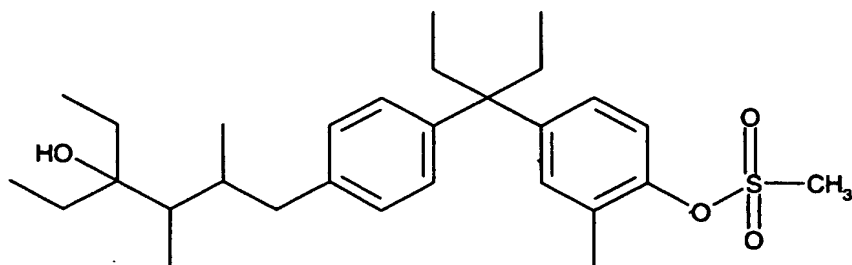


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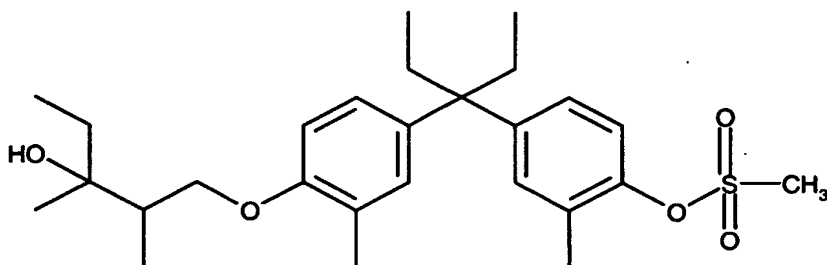


, or.

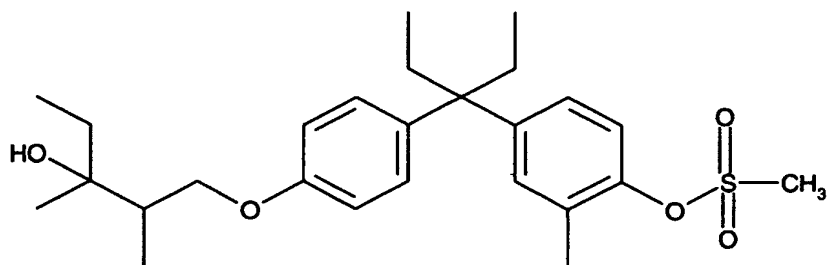
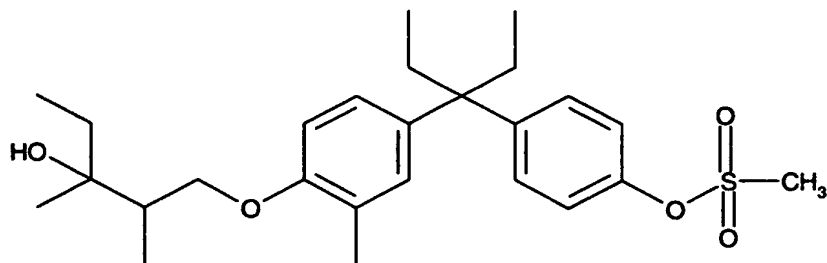
-174-



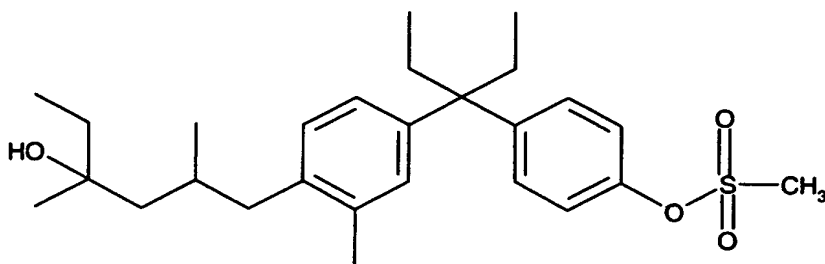
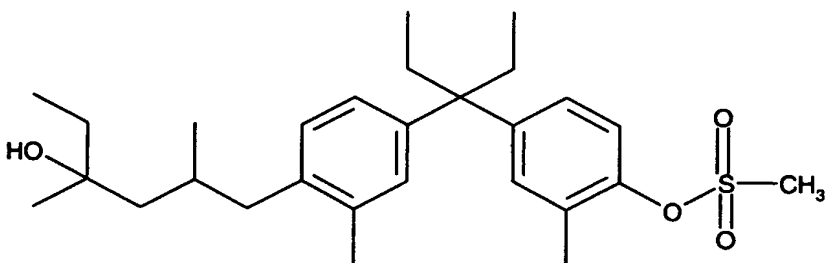
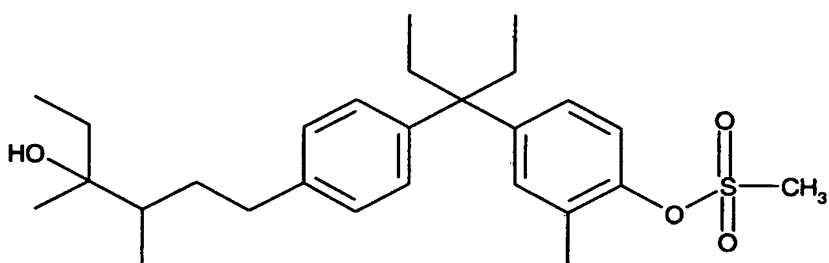
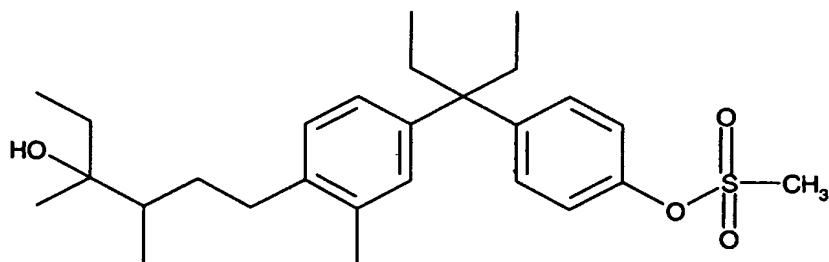
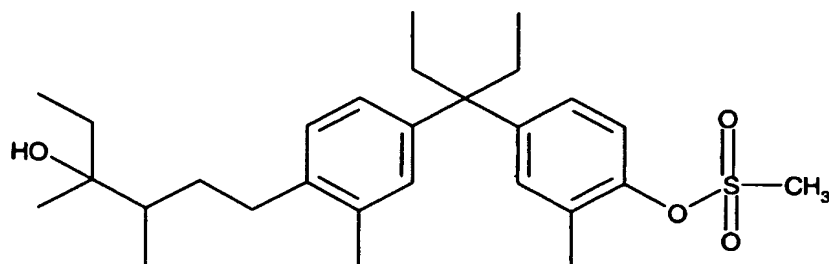
11. A compound according to Claim 1 represented by the formula:



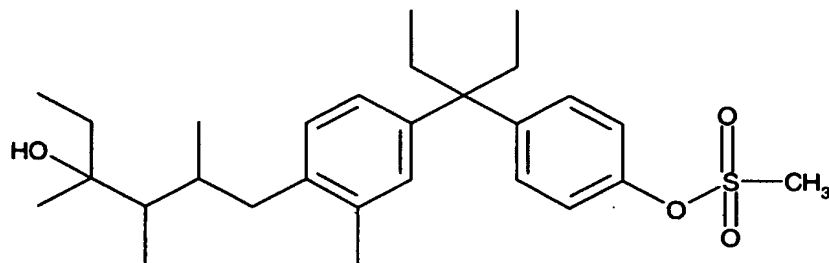
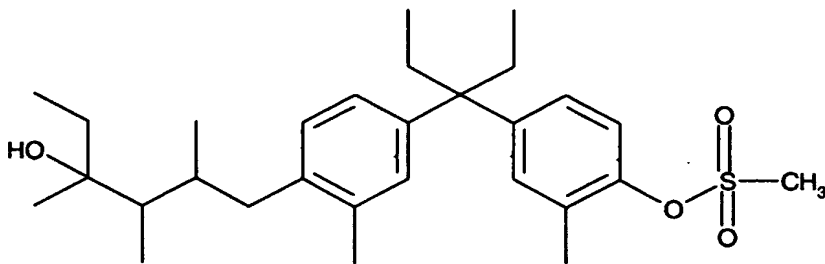
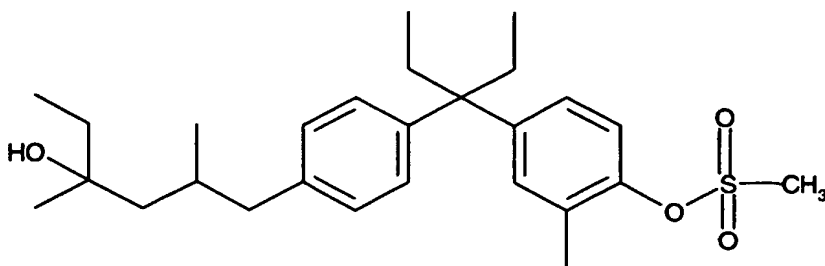
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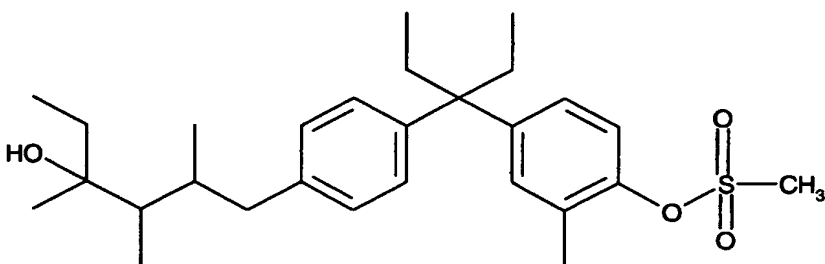
-175-



-176-

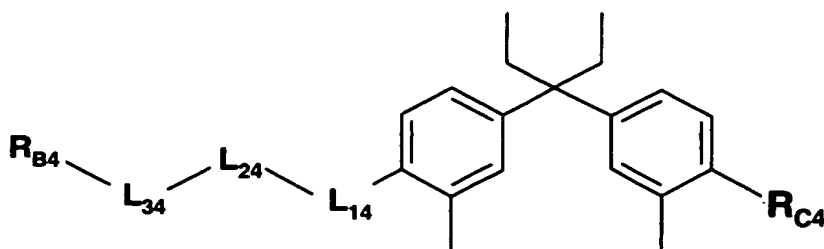


, or.



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12. A compound or a pharmaceutically acceptable salt or an ester prodrug derivative thereof represented by the formula:



-177-

where said compound is selected from a compound code numbered 1 thru 135, with each compound having the specific selection of substituents R_{B4} , R_{C4} , L_{14} , L_{24} , L_{34} , and R_{C4} shown in the row following the compound code number, as set out in the following

Table 1 :

5

Table 1

Code No.	R_{B4}	L_{34}	L_{24}	L_{14}	R_{C4}
1	tBu	C(O)	CH ₂	O	-O-S(O) ₂ Me
2	tBu	C(O)	CH ₂	CH ₂	-O-S(O) ₂ Me
3	tBu	C(O)	CH(Me)	CH ₂	-O-S(O) ₂ Me
4	tBu	CHOH	CH ₂	O	-O-S(O) ₂ Me
5	tBu	CHOH	CH ₂	CH ₂	-O-S(O) ₂ Me
6	tBu	CHOH	CH(Me)	CH ₂	-O-S(O) ₂ Me
7	tBu	C(Me)OH	CH ₂	O	-O-S(O) ₂ Me
8	tBu	C(Me)OH	CH ₂	CH ₂	-O-S(O) ₂ Me
9	tBu	C(Me)OH	CH(Me)	CH ₂	-O-S(O) ₂ Me
10	1-hydroxycyclopentyl	bond	CH ₂	O	-O-S(O) ₂ Me
11	1-hydroxycyclopentyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Me
12	1-hydroxycyclopentyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Me
13	1-hydroxycyclopentyl	bond	CH ₂	O	-O-S(O) ₂ Me
14	1-hydroxycyclopentyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Me
15	1-hydroxycyclopentyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Me
16	1-hydroxycyclopentyl	bond	CH ₂	O	-O-S(O) ₂ Me
17	1-	bond	CH ₂	CH ₂	-O-S(O) ₂ Me

-178-

	hydroxycyclopentyl				
18	1-hydroxycyclopentyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Me
19	1-hydroxycyclohexyl	bond	CH ₂	O	-O-S(O) ₂ Me
20	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Me
21	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Me
22	1-hydroxycyclohexyl	bond	CH ₂	O	-O-S(O) ₂ Me
23	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Me
24	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Me
25	1-hydroxycyclohexyl	bond	CH ₂	O	-O-S(O) ₂ Me
26	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Me
27	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Me
28	tBu	C(O)	CH ₂	O	-O-S(O) ₂ Et
29	tBu	C(O)	CH ₂	CH ₂	-O-S(O) ₂ Et
30	tBu	C(O)	CH(Me)	CH ₂	-O-S(O) ₂ Et
31	tBu	CHOH	CH ₂	O	-O-S(O) ₂ Et
32	tBu	CHOH	CH ₂	CH ₂	-O-S(O) ₂ Et
33	tBu	CHOH	CH(Me)	CH ₂	-O-S(O) ₂ Et
34	tBu	C(Me)OH	CH ₂	O	-O-S(O) ₂ Et
35	tBu	C(Me)OH	CH ₂	CH ₂	-O-S(O) ₂ Et
36	tBu	C(Me)OH	CH(Me)	CH ₂	-O-S(O) ₂ Et
37	1-hydroxycyclopentyl	bond	CH ₂	O	-O-S(O) ₂ Et
38	1-hydroxycyclopentyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Et
39	1-hydroxycyclopentyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Et
40	1-hydroxycyclopentyl	bond	CH ₂	O	-O-S(O) ₂ Et
41	1-hydroxycyclopentyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Et

-179-

42	1-hydroxycyclopentyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Et
43	1-hydroxycyclopentyl	bond	CH ₂	O	-O-S(O) ₂ Et
44	1-hydroxycyclopentyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Et
45	1-hydroxycyclopentyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Et
46	1-hydroxycyclohexyl	bond	CH ₂	O	-O-S(O) ₂ Et
47	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Et
48	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Et
49	1-hydroxycyclohexyl	bond	CH ₂	O	-O-S(O) ₂ Et
50	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Et
51	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Et
52	1-hydroxycyclohexyl	bond	CH ₂	O	-O-S(O) ₂ Et
53	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-O-S(O) ₂ Et
54	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-O-S(O) ₂ Et
55	tBu	C(O)	CH ₂	O	-O-S(O) ₂ CH ₂ CO ₂ H
56	tBu	C(O)	CH ₂	CH ₂	-O-S(O) ₂ CH ₂ CO ₂ H
57	tBu	C(O)	CH(Me)	CH ₂	-O-S(O) ₂ CH ₂ CO ₂ H
58	tBu	CHOH	CH ₂	O	-O-S(O) ₂ CH ₂ CO ₂ H
59	tBu	CHOH	CH ₂	CH ₂	-O-S(O) ₂ CH ₂ CO ₂ H
60	tBu	CHOH	CH(Me)	CH ₂	-O-S(O) ₂ CH ₂ CO ₂ H
61	tBu	C(Me)OH	CH ₂	O	-O-S(O) ₂ CH ₂ CO ₂ H

-180-

62	tBu	C(Me)OH	CH ₂	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
63	tBu	C(Me)OH	CH(Me)	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
64	1- hydroxycyclopentyl	bond	CH ₂	O	-O- S(O) ₂ CH ₂ CO ₂ H
65	1- hydroxycyclopentyl	bond	CH ₂	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
66	1- hydroxycyclopentyl	bond	CH(Me)	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
67	1- hydroxycyclopentyl	bond	CH ₂	O	-O- S(O) ₂ CH ₂ CO ₂ H
68	1- hydroxycyclopentyl	bond	CH ₂	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
69	1- hydroxycyclopentyl	bond	CH(Me)	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
70	1- hydroxycyclopentyl	bond	CH ₂	O	-O- S(O) ₂ CH ₂ CO ₂ H
71	1- hydroxycyclopentyl	bond	CH ₂	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
72	1- hydroxycyclopentyl	bond	CH(Me)	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
73	1-hydroxycyclohexyl	bond	CH ₂	O	-O- S(O) ₂ CH ₂ CO ₂ H
74	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
75	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
76	1-hydroxycyclohexyl	bond	CH ₂	O	-O- S(O) ₂ CH ₂ CO ₂ H
77	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-O-

-181-

					S(O) ₂ CH ₂ CO ₂ H
78	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
79	1-hydroxycyclohexyl	bond	CH ₂	O	-O- S(O) ₂ CH ₂ CO ₂ H
80	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
81	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-O- S(O) ₂ CH ₂ CO ₂ H
82	tBu	C(O)	CH ₂	O	-NH-S(O) ₂ Me
83	tBu	C(O)	CH ₂	CH ₂	-NH-S(O) ₂ Me
84	tBu	C(O)	CH(Me)	CH ₂	-NH-S(O) ₂ Me
85	tBu	CHOH	CH ₂	O	-NH-S(O) ₂ Me
86	tBu	CHOH	CH ₂	CH ₂	-NH-S(O) ₂ Me
87	tBu	CHOH	CH(Me)	CH ₂	-NH-S(O) ₂ Me
88	tBu	C(Me)OH	CH ₂	O	-NH-S(O) ₂ Me
89	tBu	C(Me)OH	CH ₂	CH ₂	-NH-S(O) ₂ Me
90	tBu	C(Me)OH	CH(Me)	CH ₂	-NH-S(O) ₂ Me
91	1- hydroxycyclopentyl	bond	CH ₂	O	-NH-S(O) ₂ Me
92	1- hydroxycyclopentyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ Me
93	1- hydroxycyclopentyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ Me
94	1- hydroxycyclopentyl	bond	CH ₂	O	-NH-S(O) ₂ Me
95	1- hydroxycyclopentyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ Me
96	1- hydroxycyclopentyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ Me
97	1-	bond	CH ₂	O	-NH-S(O) ₂ Me

-182-

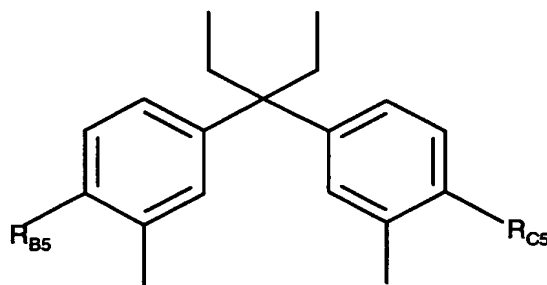
	hydroxycyclopentyl				
98	1-hydroxycyclopentyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ Me
99	1-hydroxycyclopentyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ Me
100	1-hydroxycyclohexyl	bond	CH ₂	O	-NH-S(O) ₂ Me
101	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ Me
102	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ Me
103	1-hydroxycyclohexyl	bond	CH ₂	O	-NH-S(O) ₂ Me
104	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ Me
105	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ Me
106	1-hydroxycyclohexyl	bond	CH ₂	O	-NH-S(O) ₂ Me
107	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ Me
108	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ Me
109	tBu	C(O)	CH ₂	O	-NH-S(O) ₂ CH ₂ CO ₂ H
110	tBu	C(O)	CH ₂	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
111	tBu	C(O)	CH(Me)	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
112	tBu	CHOH	CH ₂	O	-NH-S(O) ₂ CH ₂ CO ₂ H
113	tBu	CHOH	CH ₂	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
114	tBu	CHOH	CH(Me)	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
115	tBu	C(Me)OH	CH ₂	O	-NH-S(O) ₂ CH ₂ CO ₂ H
116	tBu	C(Me)OH	CH ₂	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
117	tBu	C(Me)OH	CH(Me)	CH ₂	-NH-

					S(O) ₂ CH ₂ CO ₂ H
118	1-hydroxycyclopentyl	bond	CH ₂	O	-NH-S(O) ₂ CH ₂ CO ₂ H
119	1-hydroxycyclopentyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
120	1-hydroxycyclopentyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
121	1-hydroxycyclopentyl	bond	CH ₂	O	-NH-S(O) ₂ CH ₂ CO ₂ H
122	1-hydroxycyclopentyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
123	1-hydroxycyclopentyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
124	1-hydroxycyclopentyl	bond	CH ₂	O	-NH-S(O) ₂ CH ₂ CO ₂ H
125	1-hydroxycyclopentyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
126	1-hydroxycyclopentyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
127	1-hydroxycyclohexyl	bond	CH ₂	O	-NH-S(O) ₂ CH ₂ CO ₂ H
128	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
129	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
130	1-hydroxycyclohexyl	bond	CH ₂	O	-NH-S(O) ₂ CH ₂ CO ₂ H
131	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
132	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H

-184-

133	1-hydroxycyclohexyl	bond	CH ₂	O	-NH-S(O) ₂ CH ₂ CO ₂ H
134	1-hydroxycyclohexyl	bond	CH ₂	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H
135	1-hydroxycyclohexyl	bond	CH(Me)	CH ₂	-NH-S(O) ₂ CH ₂ CO ₂ H

13. A compound of the invention or a pharmaceutically acceptable salt or an ester prodrug derivative thereof represented by the formula:



- 5 where said compound is selected from a compound code numbered 1A thru 45A, with each compound having the specific selection of substituents R_{B5} and R_{C5} shown in the row following the compound code number, as set out in the following Table 2 :

Table 2

Code No.	R _{B5}	R _{C5}
1A	3Et3OH-Pentyl	-NH-S(O) ₂ CH ₂ CO ₂ H
2A	3Et3OH-Pentyl	-NH-S(O) ₂ CH ₂ CO ₂ H
3A	3Et3OH-Pentyl	-NH-S(O) ₂ CH ₂ CO ₂ H
4A	3Et3OH-Pentyl	-NH-S(O) ₂ CH ₂ CO ₂ H
5A	3Et3OH-Pentyl	-NH-S(O) ₂ CH ₂ CO ₂ H
6A	3Et3OH-Pentyl	-NH-S(O) ₂ CH ₂ CO ₂ H
7A	3Et3OH-Pentyl	-NH-S(O) ₂ CH ₂ CO ₂ H
8A	3Et3OH-Pentyl	-NH-S(O) ₂ CH ₂ CO ₂ H
9A	3Et3OH-Pentyl	-NH-S(O) ₂ CH ₂ CO ₂ H

-185-

10A	3Et3OH-Pentyl	-O-S(O)2Me
11A	3Et3OH-Pentyl	-O-S(O)2Me
12A	3Et3OH-Pentyl	-O-S(O)2Me
13A	3Et3OH-Pentyl	-O-S(O)2Me
14A	3Et3OH-Pentyl	-O-S(O)2Me
15A	3Et3OH-Pentyl	-O-S(O)2Me
16A	3Et3OH-Pentyl	-O-S(O)2Me
17A	3Et3OH-Pentyl	-O-S(O)2Me
18A	3Et3OH-Pentyl	-O-S(O)2Me
19A	3Et3OH-Pentyl	-O-S(O)2Et
20A	3Et3OH-Pentyl	-O-S(O)2Et
21A	3Et3OH-Pentyl	-O-S(O)2Et
22A	3Et3OH-Pentyl	-O-S(O)2Et
23A	3Et3OH-Pentyl	-O-S(O)2Et
24A	3Et3OH-Pentyl	-O-S(O)2Et
25A	3Et3OH-Pentyl	-O-S(O)2Et
26A	3Et3OH-Pentyl	-O-S(O)2Et
27A	3Et3OH-Pentyl	-O-S(O)2Et
28A	3Et3OH-Pentyl	-O-S(O)2CH2CO2H
29A	3Et3OH-Pentyl	-O-S(O)2CH2CO2H
30A	3Et3OH-Pentyl	-O-S(O)2CH2CO2H
31A	3Et3OH-Pentyl	-O-S(O)2CH2CO2H
32A	3Et3OH-Pentyl	-O-S(O)2CH2CO2H
33A	3Et3OH-Pentyl	-O-S(O)2CH2CO2H
34A	3Et3OH-Pentyl	-O-S(O)2CH2CO2H
35A	3Et3OH-Pentyl	-O-S(O)2CH2CO2H
36A	3Et3OH-Pentyl	-O-S(O)2CH2CO2H
37A	3Et3OH-Pentyl	-NH-S(O)2Me
38A	3Et3OH-Pentyl	-NH-S(O)2Me
39A	3Et3OH-Pentyl	-NH-S(O)2Me
40A	3Et3OH-Pentyl	-NH-S(O)2Me

-186-

41A	3Et3OH-Pentyl	-NH-S(O)2Me
42A	3Et3OH-Pentyl	-NH-S(O)2Me
43A	3Et3OH-Pentyl	-NH-S(O)2Me
44A	3Et3OH-Pentyl	-NH-S(O)2Me
45A	3Et3OH-Pentyl	-NH-S(O)2Me

14. The prodrug derivative of the compound according to Claim 1 to 13 wherein the prodrug is a methyl ester; ethyl ester; N,N-diethylglycolamido ester; or morpholinylethyl ester.

15. The salt derivative of the compound according to Claim 1 to 13 wherein the salt is sodium or potassium.

16. A pharmaceutical formulation comprising the compound according to Claim 1 to 13 together with a pharmaceutically acceptable carrier or diluent.

17. A formulation for treating osteoporosis comprising:

Ingredient (A1): the vitamin D receptor modulator of Claim 1;

Ingredient (B1):

one or more co-agents selected from the group consisting of:

- a. estrogens,
- b. androgens,
- c. calcium supplements,
- d. vitamin D metabolites,
- e. thiazide diuretics,
- f. calcitonin,
- g. bisphosphonates,
- h. SERMS, and
- i. fluorides; and

Ingredient (C1): optionally, a carrier or diluent.

-187-

18. The formulation of claim 17 wherein the weight ratio of (A1) to (B1) is from 10:1 to 1:1000.

19. A formulation for treating psoriasis comprising:

Ingredient (A2): the vitamin D receptor modulator of claim 1;

Ingredient (B2):

one or more co-agents that are conventional for treatment psoriasis selected from the group consisting of:

a. topical glucocorticoids ,

b. salicylic acid,

c. crude coal tar; and

Ingredient (C2): optionally, a carrier or diluent.

20. The formulation of claim 19 wherein the weight ratio of (A2) to (B2) is from 1:10 to 1:100000.

21. A method of treating a mammal to prevent or alleviate the pathological effects of Acne, Actinic keratosis, Alopecia , Alzheimer's disease, Bone maintenance in zero gravity, Bone fracture healing, Breast cancer, Chemoprevention of Cancer, Crohn's disease, Colon cancer, Type I diabetes, Host-graft rejection, Hypercalcemia , Type II diabetes, Leukemia, Multiple sclerosis, Myelodysplastic syndrome, Insufficient sebum secretion, Osteomalacia, Osteoporosis, Insufficient dermal firmness, Insufficient dermal hydration, Psoriatic arthritis, Prostate cancer, Psoriasis, Renal osteodystrophy, Rheumatoid arthritis, Scleroderma, Skin cancer, Systemic lupus erythematosus, Skin cell damage from Mustard vesicants, Ulcerative colitis, Vitiligo, or Wrinkles; wherein the method comprises administering a pharmaceutically effective amount of at least one compound of claim 1 or 12.

22. The method of claim 21 for the treatment of psoriasis.

23. The method of claim 21 for the treatment of osteoporosis.

-188-

24A method of claim 21 for treating a mammal to prevent or alleviate skin cell protection from Mustard vesicants.

25. A method of treating a mammal to prevent or alleviate the pathological effects of Benign prostatic hyperplasia or bladder cancer.

26. A method of treating or preventing disease states mediated by the Vitamin D receptor, wherein a mammal in need thereof is administered a pharmaceutically effective amount of the compound according to Claims 1 to 13.

10

27. A compound as claimed in any one of Claims 1 to 13 for use in treating a mammal to prevent or alleviate the pathological effects of Acne, Actinic keratosis, Alopecia, Alzheimer's disease, Bone maintenance in zero gravity, Bone fracture healing, Breast cancer, Chemoprevention of Cancer, Crohn's disease, Colon cancer, Type I diabetes, Host-graft rejection, Hypercalcemia, Type II diabetes, Leukemia, Multiple sclerosis, Myelodysplastic syndrome, Insufficient sebum secretion, Osteomalacia, Osteoporosis, Insufficient dermal firmness, Insufficient dermal hydration, Psoriatic arthritis, Prostate cancer, Psoriasis, Renal osteodystrophy, Rheumatoid arthritis, Scleroderma, Skin cancer, Systemic lupus erythematosus, Skin cell protection from Mustard vesicants, Ulcerative colitis, Vitiligo, or Wrinkles.

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28. A compound as claimed in any one of Claims 1 to 13 for use in treating a mammal to prevent or alleviate the pathological effects of Benign prostatic hyperplasia or bladder cancer.

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29. A compound as claimed in any one of Claims 1 to 13 for use in treating or preventing disease states mediated by the Vitamin D receptor.

30. A compound as claimed in Claim 1 substantially as hereinbefore described with reference to any of the Examples.

30

-189-

31. A process for preparing a compound as claimed in claim 1 substantially as hereinbefore described with reference to any of the Examples.

32. The use of a compound as claimed in claim 1 substantially as herein
5 described with reference to any of the Assays and Tables for mediating the Vitamin D receptor.